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ABSTRACT

This paper examines the topic of systematic curriculum development at the secondary level and discusses the necessary structures and conditions for conducting systematic curriculum development in Barbados. The discussion is organized into three main chapters. Chapter 1 presents a brief overview of the secondary school system in Barbados and reviews previous curriculum activity and current structures for curriculum change. Chapter 2 discusses systematic curriculum development, drawing from the literature those concepts and elements that are most relevant to the needs of Barbados. Chapter 3 discusses problems that must be faced in conducting systematic curriculum development in Barbados and suggests possible solutions to those problems. The appendix contains several tables that summarize enrollment data for primary and secondary schools in Barbados. (Author/JG)

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SYSTEMATIC CURRICULUM DEVELOPMENT AT THE SECONDARY LEVEL IN BARBADOS

(Some problems and possible solutions)

Leslie G. Atherley

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INTRODUCTION

One of the main concerns at the present time at all levels of most school systems is with the plan for learning and how it functions; in other words, concern with the structure, the strategies and the materials which are designed to support and give direction to the instructional process and the instructional process itself.

There are a variety of reasons for this concern, but none more urgent than that which has been brought on by the pressures which have been created consequent upon the opening up of the systems - the quantitative expansion which has taken place over the last few decades. It is the widely voiced feeling that access to education must offer at the same time a reasonable chance for success in a meaningful programme that is now forcing those persons with responsibility for education to recognize, in a clearly defined set of programmes, something which they had known for a long time - to state it here only in terms of the secondary level, it is that secondary education for all is not the same thing as secondary education for a selected group.

Further, not only have the students at the secondary level increased as a percentage of that age group, but there are a variety of reasons - social, economic and political - which indicate clearly the necessity to redefine the aims and objectives of this as well as other phases of education.

Barbados, as is the case with the majority of countries, has begun to face this problem squarely. It has been recognized and concern voiced by all levels in the community - students, parents, teachers, academics and politicians. It has even been taken a step further as the Minister of Education has organized a National Curriculum Development Council and given clear instructions that there should be a "total evaluation of existing syllabus and study programmes in our system, determining whether these are adequate or in need of revision, and indicating what new areas of study or what new orientations should be introduced". 1/

This then is the background to the problem to which this paper addresses itself - how can meaningful curriculum development be conducted at the secondary level? The view taken here is that the answer lies in systematic curriculum development, and this paper will be limited to a review of, and comment on, the structures and conditions through which this approach to curriculum development might become operational at the secondary level in Barbados.

1/ Ministry of Education, Barbados. Address by the Minister of Education, Barbados, at the Inaugural Meeting of the National Curriculum Development Council, 28 February 1973, p. 6 (processed).

The first chapter gives a brief overview of the secondary school system and the main factors which at the present time can influence or be used in curriculum development activity. There will be an examination of the secondary level of education in terms of size, structure and methods of arriving at curricula. This will be followed by a review of previous curriculum activity and a description of the current structure for, and projects which can produce or assist in, curriculum change - the Planning and Research Division of the Ministry of Education, the National Curriculum Development Council, the University of the West Indies, Unesco Teacher Training and Curriculum Development Project and the School of Education's In-service Diploma of Education programme, which starts in August 1973, and the proposed structure for curriculum change which has been put forward by the recently organized Caribbean Examinations Council. At this point in the paper only background information will be presented on each of these topics and comment on what part they might best play in the total curriculum development exercise will be made later.

The second chapter presents that type of curriculum activity which is most thorough and best encompasses all the characteristics of that activity - systematic curriculum development. Here the meanings of the terms used are clarified and arguments are presented not only making the justification for systematic curriculum development, but also highlighting the structure which best facilitates it. Operational procedures are looked at and the opportunity is taken to underline some of the problems which are related to secondary school curriculum activity. In essence, this chapter is a selection, from the literature on the theory and practice of curriculum development, of what would seem to be reasonably suited to the particular needs of Barbados.

The third and final chapter attempts to see how systematic curriculum development can be conducted in Barbados. It discusses the problems which there might be in each of those areas which are seen as inescapable to the proper functioning of systematic curriculum development - the development of specifications, the production of instructional materials, the evaluation of the curriculum and the training of teachers. In addition, questions on the organization for curriculum development and the method of bringing about change are examined. Finally, in each case an attempt is made to project a solution for overcoming these difficulties.

The conclusion places the activity at the secondary level within the total curriculum development activity and puts the solutions to the problem areas in the form of possible strategies for action.

CHAPTER I

THE PRESENT SITUATION

The structure at the secondary level

The secondary phase of education in Barbados begins at age eleven and is conducted in a number of different types of schools. Up to the age of eleven, pupils are educated either in Government Primary Schools or Private Primary Schools. At the age of ten, pupils write a Common Entrance Examination 1/ which is used to select pupils for entry to Grammar Schools. 2/ There is a second chance at age eleven for those not successful at age ten. Pupils from Government Primary Schools who are not selected for one of the Grammar Schools but who attend one of the feeder schools to a Comprehensive School are automatically transferred to a Comprehensive School. 3/ There are some pupils who continue in the secondary departments of all age schools 4/ but this number is being very quickly reduced and is expected to be phased out entirely within the next ten years. Secondary schooling is also conducted in a number of Private Schools, the majority of them aided in one way or another by the Government 5/, but there will be little explicit treatment of this group in this paper. Suffice it to say that their style of operations is of the same pattern as the Grammar Schools.

1/ This is an examination in two parts written by all pupils, whether from government or private schools, in two subject areas - English and Arithmetic. The first part screens out the very weak candidates. The second, with the adjusted scores based on the raw scores and the pupil's age, is the basis for selection to the Grammar School. High scores on this examination have a strong positive correlation with verbal achievement.

2/ These are schools which were patterned after the British Grammar School. They are still, on the whole, better staffed and have better facilities than other secondary schools.

3/ At first these were known as Secondary Modern Schools and the programmes offered were more suited to a stage between primary and secondary than a secondary programme in itself. They are now Comprehensive in the types of programmes being offered and are beginning to reflect among their pupils membership of all social groups.

4/ A school which caters for both primary and secondary pupils. The age range is usually either 5-14 or 7-14.

5/ Schools owned by private persons and organizations, if approved by the government, get aid in three forms: (a) bursaries for pupils, (b) subventions for the teaching of certain subjects, (c) salaries of a specified number of staff paid.

The different types of Government schools at the secondary level are thus Grammar, Comprehensive and All-Age; admittedly a hierarchy, but with the boundaries between them fast becoming blurred.

The secondary schools being treated here are all financed by the Government, but there are basically two different ways in which these schools are controlled. The Grammar Schools each have separate governing bodies who make or ratify all the major decisions with respect to the running of the school, the appointment of staff, the programmes of the school and its administration. Further, the Grammar Schools have a tradition of not being supervised by the professional officers of the Ministry of Education. On the other hand, the Comprehensive and All-Age Schools have always been under the centralized control of the Ministry of Education. Their budget, their administration and the quality of their work is supervised by officers of the Ministry of Education.

The size of the system at the secondary level is best illustrated in the figures taken from the latest available report of the Ministry of Education which covers the period 1 September 1969 to 31 August 1970. 1/ These figures reflect the position on 30 June 1970.

In addition to Table 1 which is presented here, Appendixes I and II will give an indication, in a chart, of the proportion of the age group involved at the various schools.

Previous curriculum activity

It is very difficult to find much evidence of serious curriculum activity at the secondary level. At best there has been a little of the ad hoc activity which has been a characteristic of the beginning stages of curriculum activity in many countries. Basically, the curricula at the secondary level have been determined by examination requirements and by models copied from other countries - historically the influence of Britain, but lately, especially in the natural sciences, parts of the work of curriculum centres in the United States are being reflected in the programmes. At the Grammar School and in the top streams of the Comprehensive Schools, the Ordinary Level Examination 2/ dictates the syllabus - the content aspect of the curriculum model which will be presented. In the lower streams of the Comprehensive School and in the All-Age schools, it is the School Leaving Certificate. 3/

1/ Ministry of Education, Barbados. Report for the Period 1 September 1969 to 31 August 1970. p. 54.

2/ The Ordinary Level Examination is an external examination of one of the Examining Boards in the United Kingdom - for example, Oxford and Cambridge, Cambridge or London. It denotes graduation from Secondary School.

3/ This is a Barbadian Examination for 14 and 15 year olds of a standard somewhat equivalent to that of the Certificate of Secondary Education in the United Kingdom.

Table 1. Number of pupils and teachers in Government, Aided Independent and Independent Schools - Secondary level (30 June 1970)

Type of school	No. of schools	Roll			Teachers on the establishment		
		Males	Females	Total	Trained	Untrained	Total
Grammar	10	3 143	2 165	5 308	117	152	269
Comprehensive	7	4 197	4 550	8 747	206	271	477
All-Age	57[a]	2 493	1 816	4 309			b)
Sub-Total	74	19 833	8 531	18 364			
Aided Independent	17	2 515	4 481	6 996	96	218	314
Independent	3	134	214	348			12
Sub-Total	20	2 649	4 695	7 344			
Grand Total		12 482	13 226	25 608			

a) The number of all age schools is now considerably reduced as two new comprehensive schools have been opened since these figures were compiled. The policy is to build more comprehensive schools and phase out the all-age schools entirely.

b) No figures can be given here as there is no breakdown between those who teach in the Primary departments and those who teach in the Secondary departments.

It is necessary to relieve this picture of gloom by noting two factors. In a few of the Grammar Schools there has been an attempt to modernize some of the programmes. This has been the result of some hard work by some subject teacher associations coupled with the interest of and permission from those head teachers who are willing to accept change. Further, as was noted earlier, the Comprehensive and All-Age Schools are under the direct influence of the Ministry of Education. Consequently, when the subject committees which were working at the Primary level extended their activity to the Secondary level, it was for these schools that curricula in, for example, Language Arts and Social Studies were prepared.

Present structure for curriculum development

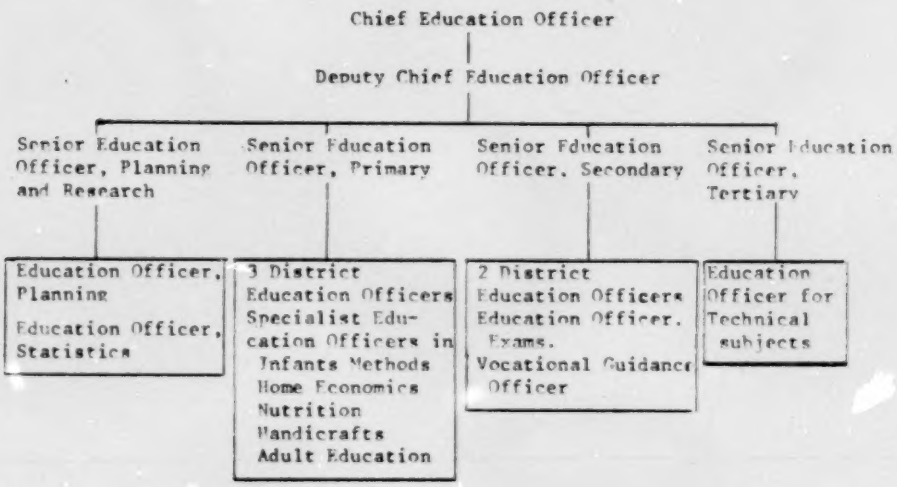
There are two specific groups currently established which share direct responsibility for curriculum development - these are the Planning and Research Division of the Ministry of Education and the National Curriculum Development Council. A short historical development is necessary to show the build-up to this position.

Barbados, as with most countries in the 1960's, was caught up in the tide of curriculum activity. Again, reflecting the situation in the majority of these countries, it was ad hoc activity and, to follow what was then a general trend, it was at the primary level. Curriculum committees

working from 1966 produced, from 1968 onwards, curriculum guides for the primary level in such subject areas as Social Studies, Language Arts, Mathematics and General Science. There was no co-ordinating group to view the problem of the integration of the various subject areas and no-one charged with the responsibility of implementation.

The Planning and research Division of the Ministry of Education was formed in the midst of all this activity (September 1969) but has, so far, not made a significant contribution to the curriculum development activity; some curricula have been field tested in pilot project situations. Many reasons can be advanced for this. more particularly that general planning, statistical collection and report writing left very little time or staff for supervising the implementation of programmes. In any case, much of the supports for guaranteeing success - materials, teacher training programmes - needed to be more clearly defined. Figure 1 shows the organization of the professional staff of the Ministry and to complete the present picture it is necessary to note that strenuous efforts are being made to recruit subject specialists for the curriculum activity of the Planning and Research Division.

Figure 1. The organization of the professional staff of the Ministry of Education



It was with the intention of making curriculum development an on-going activity and of providing as well co-ordination among the activities of the various committees that the National Curriculum Development Council was formed. Its major terms of reference are :

" (i) to review the existing curricula in the various categories of schools in the educational system.

(ii) to advise the Minister on the subjects to be taught in Nursery, Primary and Secondary Schools and the time to be allocated to such subjects;

(iii) to receive from Subject Committees, specially established for the purpose, detailed syllabuses, guidelines and a list of appropriate text-books, teaching material and other equipment for each year of the relevant school course;

(iv) to review the work of the Curriculum Subject Committees."1/

These terms of reference have been quoted in full as it will be necessary to return to them in our discussion of the most desirable type of organization for curriculum development.

Caribbean Examinations Council

In most school systems examinations are a very powerful influence and in many those at the end of the secondary level have been the most significant. A report from a Committee on Secondary Education in Western Australia notes three influences of examinations:

" (i) It affects the treatment of the examinable subjects themselves, tending always to exalt the written above the spoken, to magnify memory and mastery of fact at the expense of understanding and liveliness of mind.

(ii) It depresses the status of non-examinable subjects.

(iii) The examination which began as a means becomes for many the end itself."2/

and thus underlines what a serious constraint on curriculum reform may be imposed by an external examination system.

The final exams at the end of secondary school have been, in the West Indies up to the present, external, set by one of the Examining Boards in the United Kingdom. Especially in the 1960's, some attempts were made to make the objectives and content in some areas, notably history, geography and biology, more relevant to the needs of the students in the area. There has been some scattered success but the overall result has not been very flattering. The Caribbean Examinations Council 3/ has recently been established, and this will, beginning in a few subject areas, gradually take over the running of the entire examination in a manner similar to the way in which the West African Examinations Council started. In forming their Schools Examinations Committee and

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1/ Ministry of Education, Barbados. Address by the Minister of Education, Barbados, at the Inaugural Meeting of the National Curriculum Development Council, 28 February 1973. p. 8-9 (processed)

2/ The Education Department of Western Australia. Secondary Education in Western Australia. Report of the Committee appointed in February 1969. p. 103.

3/ This Council is made up of 16 territories in the English-speaking Caribbean and will sponsor Public Examinations taken in the region. Its inaugural meeting was 11-12 January 1973.

Subject Panels, the Caribbean Examinations Council have been immediately conscious of the need for machinery for revising and constantly evaluating the curricula. As yet no clear structure has emerged, but one immediately sees the possibility of a vigorous and carefully organized curriculum development programme having a great influence in defining the content and methods of evaluation.

Other facilitating factors

Two other factors, both in the area of Teacher Education, must be seen as important elements in curriculum development at the Secondary level. The first is the University of the West Indies' Unesco Curriculum Development and Teacher Training Project, Reg. 142, which started in September 1971. It functions with the 11-14 age group in the subject areas of Mathematics, Language Arts and Science and its main focus, in Barbados, has been in the Comprehensive School. The other is the expected start of the In-service Diploma of Education Programme for the training of graduate Secondary school teachers, which is due to start in August 1973 at the School of Education.

It is hardly necessary to underline the importance of teacher training in the curriculum development exercise. The fact that there will be no long-standing traditions of how these programmes operate, and also that the staff can be used in the committee work, makes these developments very significant.

Even without the mention of the presence of other groups such as subject teacher associations, teachers' unions, university personnel, it is evident that there exists a variety of groups and agencies with the potential for carrying out a full scale and meaningful curriculum development programme. What is needed is to establish clearly what must be done and to determine a method of operating if systematic curriculum development is to be achieved. After this, the ways in which these various factors can be used within the overall framework, or what modifications will be necessary, will have to be looked at. We must turn first, however, to clarifying our understandings of systematic curriculum development.

CHAPTER II

SYSTEMATIC CURRICULUM DEVELOPMENT

One does not lack these days for writings on the topic of curriculum development nor for the number and variety of models of how this activity can be carried out. However, in our search to arrive at an understanding of how this process can be operational, very little consideration will be given to the conflicting models. Rather, the concept and implications of a systematic approach to curriculum development will be explored in detail.

In this respect, comment will be restricted to four areas. First, there will be a clear definition of what, in this paper, is meant by curriculum development. Second, the reasons why systematic curriculum development is necessary will be examined and this will at the same time show some of the areas which need to be tackled. Third, it will briefly be set out how countries or areas are usually, or can best be, organized for curriculum development, and, finally, some of the basic characteristics of that activity will be highlighted. All that is stated in this chapter is relevant to curriculum development at any level, but points of special concern to the secondary level will be noted.

The meaning of curriculum development

There has been, and continues to be, a wide range of variations of what is to be included in the definition of the word curriculum. At one end of the continuum, curriculum is defined as "the total effort of the school to bring about desired outcomes in school and out-of-school situations". 1/ At the other end, it is sometimes contracted so as to limit concern specifically to objectives and content - usually called the syllabus - and all other aspects which deal with the structuring of the learning experiences of the pupils are put in a category called methods and are not regarded as being part of curriculum activity. It is the feeling here that the best operational definition lies somewhere between these two extremes. The claims made by the first definition are so broad that it appears almost impossible to make it functional. The other draws too sharp a distinction between the method and the curriculum. Taba, in commenting on the range of interpretations of curriculum, notes that only some objectives can be implemented by curriculum content, its selection and organization, but others may be achieved by the way in which learning experiences are organized and sums up: "the criteria for and the decisions about learning experiences necessary to implement major objectives belong to the realm of curriculum design." 2/

1/ J. G. Saylor and W. M. Alexander, Curriculum planning for better teaching and learning, New York, Rinehart, 1954, p. 3

2/ Hilda Taba, Curriculum Development. Theory and Practice. Harcourt, Brace and World Inc., New York, 1962, p. 9

If one accepts this meaning of curriculum, one still has to identity the various elements which are found in a curriculum, as these represent areas where decisions should be made.

Perhaps the best way of arriving at these elements of the curriculum is by way of deducation from one of the models of curriculum development - this is the very successful model formulated by Tyler in 1950 1/ and which advanced much of the work in curriculum development started in the 1920's. 2/ As he himself puts it: "The rationale ... begins with identifying four fundamental questions which must be answered in developing any curriculum or plan of instruction. They are: (i) What educational purposes should the school seek to attain? (ii) What educational experiences can be provided that are likely to attain these purposes? (iii) How can these educational experiences be effectively organized? (iv) How can we determine whether these purposes are being attained?". 3/

It is important, however, to note that "Tyler's analytic scheme is useful only in the categorizing of the elements of a curriculum problem - it does not provide prescriptions for possible courses of action to alleviate the problem". 4/

The operations implied in this definition are determining objectives and stating them in a proper form, working out learning experiences, selecting and organizing learning experiences so that specified outcomes can be attained and finally providing for a programme to evaluate the outcomes. These, then, are the basic elements which are found in any curriculum, whatever its particular design. The differences in programmes derive from the varying emphasis which is placed on these elements, the way in which the relationships are established between them and the manner in which decisions about the various elements happen to be made. This aspect will be looked at when, later in this chapter, some basic characteristics of curriculum activity are being examined.

1/ Ralph W. Tyler, Basic Principles of Curriculum and Instruction. The University of Chicago Press, Chicago, 1970.

2/ John I. Goodlad, The Development of a Conceptual System for Dealing with Problems of Curriculum and Instruction. The University of California Press, California, 1966, p. 2.

3/ Ralph W. Tyler, op. cit. p. 1.

4/ Ian Westbury and William Steimer, "Curriculum: A Discipline in Search of its Problems", p. 250. School Review, Chicago. University of Chicago, Vol. 79, No. 2, February 1971, p. 243-267.

Why systematic curriculum development

The need for a systematic approach to curriculum development is an important area which warrants further explanation. In actual fact, this is a cyclic on-going process or, as it is sometimes referred to, a rational and scientific process. One may state that the criteria which should be used for decisions on the various elements - these have been identified earlier - should be taken from those aspects which form a reasonable basis for curriculum. These can include the learner, the learning process, the societal demands and the content of the disciplines themselves. If one accepts that these are important criteria for making the decisions, and it is recognized that there are swift changes taking place in these areas, then the need for an on-going re-examination of the curriculum is clearly indicated.

Curriculum change is definitely required because of the new knowledge, of the learning process and of the nature of the learners themselves, which is constantly being generated. The information which is available on the learning process and on the development of individuals has a clear influence on the curriculum, since that constitutes a plan for learning. There is a variety of special methods of instruction which need to be evaluated and the success or rejection of these will certainly influence the objectives which are available at any given time. Knowledge of the learning process assists in determining how much is included in the programme and also sets up the conditions for optimal learning. Finally, many studies of individual development have now extended their activity to ages which are covered by the secondary phase of education and it can certainly be expected that curricula will respond to their finds, at least by testing them out. The developing knowledge of the learning process and the nature of learners is one factor showing the need for on-going curriculum activity.

The changes which are taking place in the society, even though in many instances they are not at all clearly articulated, and the aspirations and expectations of the population are also important factors to which the educational system must make a response. Within the very fashionable phrase of 'democratization of education' lies a basic challenge to the function of the school in society. This is not a situation where one moves from one fixed position to another equally rigid position, but rather a situation where the society constantly re-evaluates the functions of the schools. In this respect, it is necessary to stress two points here. First, the economic and social needs of the country should indicate directions for modification in the curriculum. Especially at the secondary level, one should use manpower requirements as a guideline, recognizing that the continued expansion of technologically based economies is usually dependent on the availability of skilled manpower. Moreover, the curriculum has to show that schools have to educate for the understanding of social change. The second point elaborates on the question of social change, noting that curriculum responsibility "goes beyond the question of educating for social adjustment and is concerned more with presenting social issues and problems to the learner and helping him in bringing to bear on these issues the attitudes of an inquiring mind" 1/ - issues of international

1/ Unesco, Growth and Change. Perspectives in Education in Asia. (Educational Studies and Documents No. 7), Paris, 1972, p. 45

co-operation, race relationships, human rights, etc. The best way of being geared to accept the responsibilities as outlined in this paragraph is through systematic curriculum development.

The third reason why there should be systematic curriculum development lies in the nature of knowledge itself. In many of the subject areas there is not only an explosion of knowledge in the field, but also basic change in the conception of the subject itself and in the way it is related to other subjects. These developments have profound implications for the curriculum. They imply that the basic disciplines which form the school subjects studied should be re-examined regularly to make sure that what appears in schools to be taught in those subjects would be regarded as consistent with what the scholars in those areas recognize as being in line with the trends in the subjects. One way in which this might be reflected is in the concern of many scholars for a study of the structure of the disciplines as opposed to the acquisition of a body of knowledge. 1/

It is clear then that there are a number of factors of direct relevance to having a proper curriculum which show the need for curriculum development on a continuing basis. Involved in this activity will be a variety of persons and groups. One thus finds the need for a structure which would facilitate this type of development and, from the literature, there seems to be a clear answer.

The curriculum centre

The historical development of curriculum activity shows a move from ad hoc committee work to a more centralized systematic approach. Ad hoc activity featured, in the main, a small group of persons, mainly teachers, who wanted to make some changes in a course or a series of subjects. They were concerned with their own area and not really empowered to make far-reaching nor, what was really needed at times, structural changes. Further, the duration of their work had a specific time limit and thus the cyclic, on-going aspect of curriculum development could in no way be guaranteed. The acceptance of the cyclic on-going aspect of curriculum development and the need for a constant re-examination of the criteria on which decisions on the curricular elements are based has led towards the establishment of a centralized office for the activity of curriculum development. The most acceptable structure for this seems to be a centre.

If one can state that certain structures are very fashionable, then that of a centre is certainly so. The movement towards the creation of national centres for curriculum development is very strong and forms one of the two major resolutions which came from a Unesco-sponsored Meeting of Experts on Curriculum and General Education in Moscow, USSR, in January 1968. The preamble to the resolution urging the creation of national centres reads: "the process of curriculum construction is a very complex one requiring a variety of experts to participate in the development of specifications, learning materials, evaluation procedures and educational research. The most effective curricula are now being developed by those nations fortunate enough to possess curriculum centres with appropriate teams of experts". 2/

1/ G. W. Ford and Lawrence Pugno (eds). The Structure of Knowledge and the Curriculum, Chicago, Rand McNally, 1964.

2/ International Association for the Evaluation of Educational Achievement. Report of the International Seminar for Advanced Training in Curriculum Development and Innovation. Gränna, Sweden. 5 July-14 August 1971. p. ii.

It is, of course, very possible to have systematic curriculum development being accomplished in a variety of structures. One has only to look at the reports of the countries represented at the International Curriculum Organization meeting of December 1972 1/ to be aware of this variety, ranging from a small section within a Ministry of Education, through a Curriculum Unit within a Ministry, to a fully established centre. What is undeniable is that there are certain major functions which any group carrying out systematic curriculum development must undertake; these can be accomplished in a variety of settings but possibly most easily and best in a separate and distinct centre.

The functions of systematic curriculum development

As identified in the International Curriculum Organization position document 2/, there are four major functions in systematic curriculum development:

(i) The determination of the specifications of the curriculum.

(ii) The development of learning materials and instructional procedures.

(iii) Evaluation of the effectiveness of learning materials and instructional procedures.

(iv) The In-service and Pre-service training of teachers for curriculum changes.

To these I would add a fifth which, although implied in some of the functions mentioned, needs to be carefully thought out and effected - the introduction and supervision of any changes in the system.

The first function, the determination of the specifications of the curriculum, involves decisions on the objectives and content of the curriculum. We saw earlier that a curriculum contains not only certain basic elements but also a rational process. If one further accepts that this task requires orderly thinking, then the order in which the steps are made is important. The model put forward by Tyler and detailed previously presumes such an order; thus, from it, specifications would cover the diagnosis of needs, the formulation of objectives, the selection of content and the organization of content. This then is the order, but a variety of persons contribute at all stages to the specifications. There are also various levels of specifications. If the secondary phase of education is taken, there are the specifications for the overall curriculum and the specifications in each subject area.

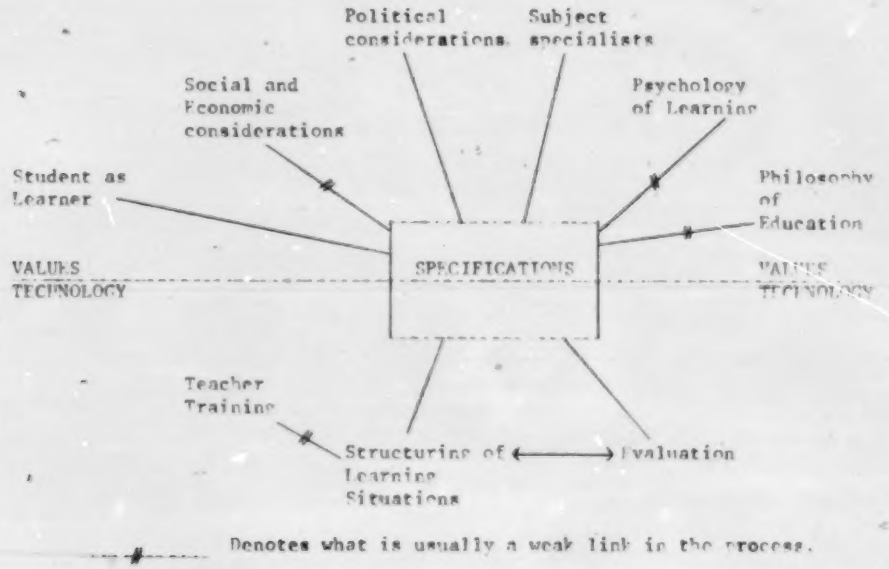
1/ International Curriculum Organization. Documents of the meeting of 30 November - 2 December 1972. Paris, 1972 (processed).

2/ International Curriculum Organization. Summary position paper on the establishment of the International Curriculum Organization. Paris, December 1972, p. 9-10 (processed).

It is just at this point that the major differences between the curricula of different countries develop. To maintain our concern at the secondary level, those countries which have tertiary institutions for training their manpower requirements can afford to maintain a broad general orientation at the secondary level, e.g. the United States; however, for those whose secondary pupils are immediately absorbed into the labour force, the secondary education has to equip them with essential skills. In addition, when even the secondary leavers are moving directly into the labour force, the social and economic considerations in the country, whether it is basically agricultural, dependent on heavy industry or dependent on light industry, should affect the overall objectives of a programme.

Figure 2 is an attempt to show all the factors, both in terms of values and technology which should influence the specifications of the curriculum. It even goes a step further and indicates those areas which, from practice, are seen as being weak links.

Figure 2. Factors influencing the specifications of the curriculum



One last point will be made about specifications, and this at the level of the subject, to show differences in curricula in different countries. The content used to illustrate the objectives is an important aspect of the specifications. While it is possible to arrive at the same objectives for the teaching of geography and mathematics in two different countries, it can be recognized that even if the same content is used in the mathematics for countries on two different continents, the content in geography would necessarily, or certainly should, be different.

The second function, the development of learning materials and instructional procedures, in reality includes both the elements of the selection of learning experiences and the organization of these experiences. It is hardly necessary to point out the necessity to design and produce materials which will fit in with the goals and which "will be integrated to fit in a carefully developed instructional system through systematic evaluation, to meet the needs of all children of different aptitude". 1/ There will, of course, be many instances of the group in charge of systematic curriculum development being unable to produce these themselves, but it then becomes their responsibility to see it done.

The third function, evaluation of the effectiveness of learning materials and instructional procedures, is being continually given more attention in the literature, but its various patterns and models are usually shown at the level of theory and not of practice. The evaluation, which at the secondary levels is seen in terms of the examinations, should really be of two types: (i) making sure that there is consistency between the objectives and what the students actually get out of the learning process - evaluation of student performance; (ii) checking to see if experiences are provided which offer reasonable opportunities for learners to arrive at meaningful goals - evaluation of the curriculum.

These two types of evaluation do not in any way supplant the evaluation of each step of the process and the use of the feedback received in keeping the cyclic on-going process functional.

The fourth function, in-service and pre-service training of teachers, ensures that there will be persons in the system who are conversant with the content and methods of organizing the learning experiences and who will be psychologically prepared to accept the challenge of change. As noted in the case of production of materials, the major action to be taken to achieve this function would really be a responsibility for seeing that those charged with the specific duty - this time the teacher trainers - are in phase with what is being done, and persuaded to modify their actions accordingly.

The function which I have added, the introduction and supervision of any changes in the system, seems to be necessary as an overall bind to the whole activity. It is true to say that a lot of activity of implementation is implied but it is precisely because many changes have been foisted on almost all educational systems within the last few years that planning is important. "Unplanned or poorly planned changes have great potential for failure and/or may produce resistance by teachers, parents and students, hence, although having merit, these changes may fail." 2/

1/ Korea, Report of the Korean Educational Development Institute, p. 4 in International Curriculum Organization. Documents of the Meeting of 30 November - 2 December 1972. Paris, 1972, ICO/72.14 (processed).

2/ Bob L. Taylor, "How effective is a Model for Introducing Planned Change?", p. 450. Social Education, National Council for Social Studies, Vol. 35, No. 5, Washington, May 1971, p. 450, 451, 531.

Further, to leave the job of implementation to those persons in the system who normally see that the rules are kept, is a situation that needs to be avoided because of the difficulty of combining that role with that of instigator of change.

As was stressed earlier, the general feeling is that systematic curriculum development can be most effectively carried out from a separate centre and clear advantages would seem to result from such a structure - provided, of course, that it is adequately staffed in these areas. First the centre would be able to carry out the research tasks in the system, which in turn would provide necessary information for curriculum development and would at the same time monitor the research from other countries or areas which might have applicability. The second advantage is in the area of development of programmes, new ones, integrated ones and programmes which cater to the needs of all pupils. Needless to say, the evaluation strengths of the centre will be very much called into play here. Finally, a centre entirely separate from the body which holds sanctions against teachers - the Ministry of Education - would be a useful agency for instigating and supervising changes in the system.

CHAPTER III
PROBLEMS IN ACHIEVING SYSTEMATIC CURRICULUM DEVELOPMENT AND POSSIBLE SOLUTIONS

This chapter sets out the problems and constraints that can be seen arising from an attempt to conduct systematic curriculum development at the secondary level. At each stage along the way, some possible strategies for avoiding these problems, or at least overcoming them, will be suggested, but it is necessary to underline the very tentative nature of these solutions.

The way in which the country is organized for this activity is a key element in whether or not the prospects of success are bright. The first section will examine the organizational structure for curriculum development. Next is the process of development of the programmes. Here of central concern will be effective ways of arriving at aims and objectives and also of preparing for the selection and organization of content. Implementation is an area where even some of the best constructed programmes often falter. Support systems to this activity are crucial and, in this third section, three important areas will be examined: (a) staffing of a Curriculum Development Unit to cover all the critical areas; (b) In-service and Pre-service programmes for the training of teachers; and (c) the production of materials to support the programme. Further, because of the differences in structure and control at the secondary level, there will be the problem of reaching the schools, and it is very important to consider those factors which will facilitate this. Finally, there is the question of evaluation. While recognizing that there is, to some extent, evaluation at each stage, there is need to confront the problem of total evaluation as a means for continued improvement.

The organization for systematic curriculum development

The first concern is with what is the best organizational structure possible, taking into account the present situation, which would facilitate the work of systematic curriculum development. Although the topic with which this paper is concerned is confined to the secondary level of education, it is useful to point out that the structure being discussed here would, in effect, cover all curriculum activity - at Nursery, Primary and Secondary Levels.

The emphasis which has been found in the literature, whether one is looking at curriculum development of a whole system at the national level or at major projects in specific subject areas, supported by funding agencies, seems to point decidedly in favour of a centre where all the functions of systematic curriculum development can be carried out or at least to a centralized unit which can fulfil these functions. It was noted earlier that the Moscow meeting of Experts on Curriculum and General Education, 1968, recommended support for the creation of centres; thus it is hardly

surprising to find this as one of the recommendations of a Unesco mission which visited Barbados in 1969.1/ It was, however, fifth on a list of six priorities and no effort has been made, so far, to implement it.

The main groupings around which curriculum activity in Barbados is focused are the National Curriculum Development Council and the Planning and Research Division of the Ministry of Education. Membership of the National Curriculum Development Council is restricted to those individuals invited by the Minister, and to representatives of certain groups and organizations. This necessitates dependence on voluntary activity from persons who are, in the main, committed to the task but are, at the same time, very busy people. In small communities, one of the problems is that there is a small number of persons who become very involved in a lot of voluntary committee work. The Planning and Research Division of the Ministry of Education has, as one of its designated functions, responsibility for curriculum development in the schools and further its staffing competence is being gradually improved to allow it to carry out this job. However, the stated relationship between these two bodies seems to have in it some potential which can hinder rather than facilitate the work of curriculum development.

As set out in the speech of the Minister of Education to the National Curriculum Development Council, they are charged with the responsibility of establishing the goals and objectives of the system and then to establish committees to work out the curricula in the various subjects - these committees report directly back to the National Curriculum Development Council. He further goes on to state: "I place at your disposal all the resources of my Ministry".2/ Before examining what this seems to imply in organizational structure, some comment will be made on the implications of systematic curriculum development which were made in the previous chapter.

The basic characteristics of systematic curriculum development demand permanence of the team or group specifically charged with effecting it. Not only is such a team required for the technical competence in developing the programmes, but also in conducting research on the problematic areas in the system - e.g. teaching techniques, materials to be used, evaluation of programmes - and using the feedback in the cyclic, on-going process. Such a team should also monitor the research of other countries to determine if anything from it is useful for the situation in Barbados. It is these types of considerations which have moved many countries to establish strong curriculum centres. (Appendix III is included for information and shows the envisaged activities of a centre in terms of their input-output phases.) These characteristics do not yet include that associated with implementation which, as we shall see when we come to the section on reaching the schools, is best carried out by a group of change agents who are recognizably apart from the power with the sanctions.

1/ Unesco, Barbados. Education and Priorities for its Development. Paris, July 1969, p. 17.

2/ Ministry of Education, Barbados. Address by the Minister of Education, Barbados, at the Inaugural Meeting of the National Curriculum Development Council, 28 February 1973. p. 11 (processed)

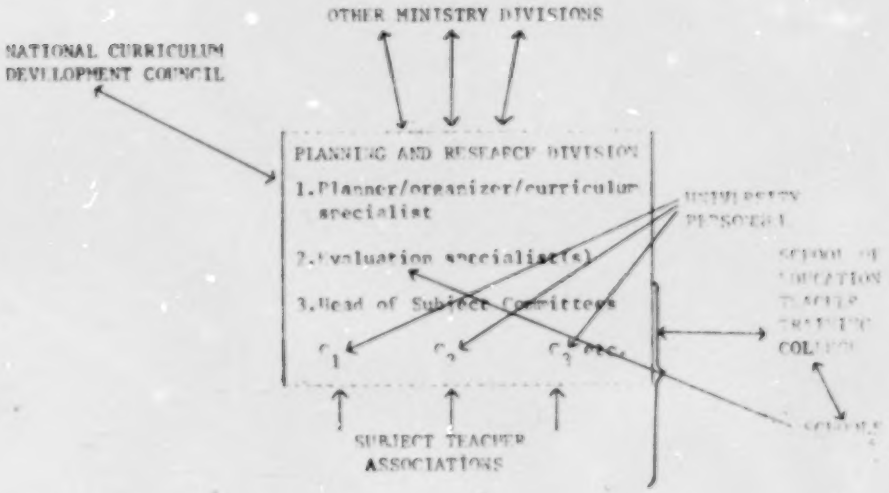
Many of these activities can only be carried out by members of a division whose full-time job it is, and to have them reporting to an advisory council which is charged with over-all responsibility does not seem practical - this, more so, in view of the fact that members of the Planning and Research Division are in their structure responsible to the Chief Education Officer and have as one of their terms of reference to take charge of curriculum development.

Given the situation as it exists at present, Barbados can, with very little change, move to a position of being organized for systematic curriculum development without having to move to the position of establishing a centre. There are at least two countries which have units for curriculum development which can serve as a useful model: these are New Zealand and Ghana - and they each have Curriculum Units, with very specific functions detailed, attached to the Ministry of Education. Further, they are structured in such a way that there is little movement between members of that unit and other professional officers. This is because of the need to hire persons with specific skills and also to maintain a certain grouping to ensure continuity in all aspects of curriculum development. In addition, there is the need to promote a special identity of these persons in the eyes of the teachers and so facilitate their acceptance as change agents. The type of solution being suggested here is that the Planning and Research Division assume all the functions of a centre, as set out earlier, and act as the central focus of curriculum development.

There is, of course, no attempt being made to gainsay the value of a general body such as the National Curriculum Development Council which reflects the many facets of society which are interested and concerned with educational development. There are some levels in terms of values and general aims and objectives where it is vital to have the participation of a group such as this but, as will be shown later, this is only a small, though important, part of the process of curriculum development.

The Planning and Research Division functioning in a manner similar to the curriculum units described, should be the central point in the curriculum development activity. Figure 3 attempts to diagram the relationships. It should be noted, however, that there are other persons in the Ministry who have been and are concerned with curriculum development, more particularly the specialist education officers. These could, over time, be transferred to the Planning and Research Division. The National Curriculum Development Council should maintain the general position of forward thinking on the educational system and the presentation of broad aims and objectives, but the Planning and Research Division should be responsible for the planning, organization and integration of appropriate research and for co-ordination/supervision of the activities of the related interest groups as indicated in Figure 3. Such an arrangement involving as it would the full-time activities of officers of the Ministry of Education would be better geared structurally to service the ancillary bodies on whose work the Planning and Research Division would depend and whose work it would co-ordinate and, in general terms, supervise and direct.

Figure 3. Organizational structure for systematic curriculum development



The development of specifications

This section centres briefly on the problem of the development of a new or changed curriculum. It has been shown that one of the basic features of systematic curriculum development is that one recognizes orderly thinking - both the order and the way in which decisions are made are important. The order and the areas covered are the diagnosis of needs, the formulation of objectives, the selection of content and the organization of content - in effect, all those things which fall into the category of the determination of specifications.

In his attempt to summarize the substantive decisions of rational curriculum planning, Goodlad produces the following figure (Figure 4). 1/ "The two way vertical arrows suggest the downward derivation from values to educational aims, to general educational objectives, to specific educational objectives and the reverse evaluative process. The two-way diagonal arrows suggest the derivation and evaluation first of learning opportunities (L.O.) and second of organizing centres (O.C.)." 2/ He is very quick to admit that a very important feature is who takes what decisions, and Figure 5 - which is also taken from his book 3/ - spells this out. Both these figures are accepted here as being useful guidelines for the development of specifications and it is within these contexts that the problem will be looked at.

1/ John I. Goodlad, The development of a conceptual system for dealing with problems of curriculum and instruction, California, The University of California Press, 1966, p. 65.

2/ Ibid p. 64

3/ Ibid p. 68.

Figure 4. Substantive decisions and derivations in a conceptual system for curriculum

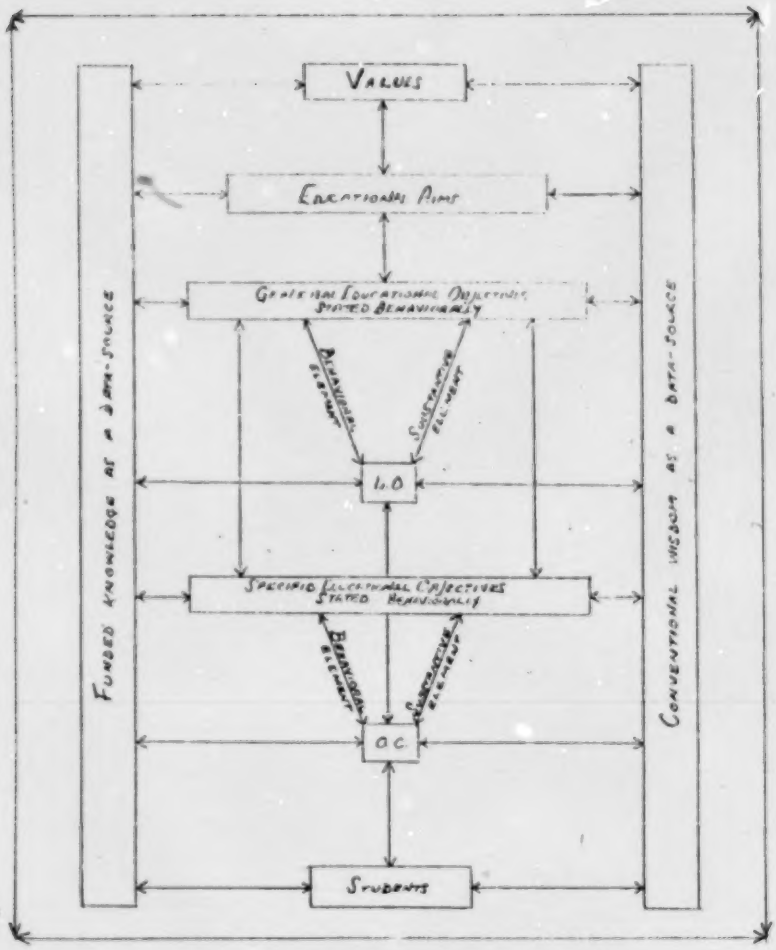
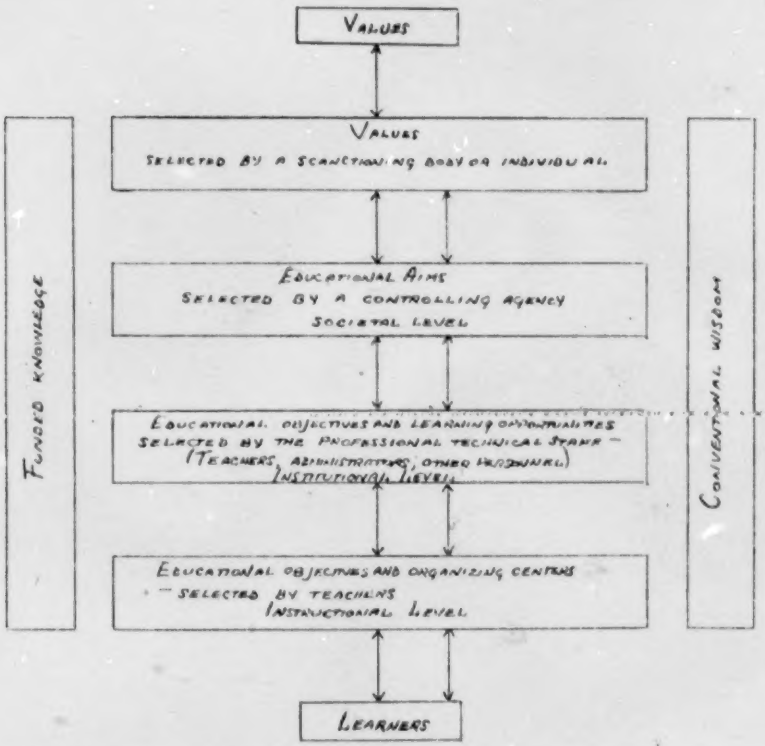


Figure 5. Curricular decisions, levels of authority and responsibility, derivations, evaluations, data sources and transactions in a conceptual system for curriculum



Our first problem here will be in arriving at common understandings of how to approach the task. Information on conceptual systems for dealing with the problem of curriculum will certainly be known to the members of the Planning and Research Division and they should see it as their responsibility to provide members of the National Curriculum Development Council with this information. The first concern would be how far down the order of specifications a general body should be allowed to go, and then to ensure that all important factors are taken into consideration. It is to be expected that a general body would select values which are important as far as education is concerned and would derive educational aims from them.

These are undoubtedly difficult areas and, when agreement on them is reached the resultant policy is seldom revised as often as other stages in the curriculum process; thus, the educational aims should take fully into account possible future developments. The values here are described by some as the overall purposes of education. In Barbados there has been a massive intake in the numbers at the secondary level with a very large part of the age group going on until at least age 14 (see Appendixes I and II) without any redefining of the purpose of education.

Fox 1/ has identified a number of value priorities: (i) humanism, (ii) equality of educational opportunity, (iii) pluralism, (iv) dealings with the whole child, and (v) the search for value. On the last point there is still much research to be done on the rôle of the school in maintaining or inculcating those values we want. It is to considerations like these that the attention of the members of the National Curriculum Development Council should be directed. It is, of course, important to realize that "a given value statement does not necessarily provide ends for education but that values are basic to the determination of educational aims". 2/

One can reasonably expect that there will be, possibly beginning with the educational aims but certainly with the general educational objectives, recognition of the realities of the different types of pupils in secondary education. "Inequalities persist and so educationalists must search for secondary school programmes that simultaneously meet the needs of growing numbers of pupils, stimulate more pupils to attend and, not least important, satisfy the basic demands to which secondary education has to respond - namely, provide a programme of general education to a constantly rising level, train middle-level manpower and prepare for higher education." 3/

It is expected that, up to this point, general educational objectives (Figure 5) can be articulated by the National Curriculum Development Council. Decisions should also be taken about the various methods of organization of the curriculum, what parts should be subject centred, what inter-disciplinary and, in any case, the basic structure of the programme.

At the secondary level one begins to become more and more specialized and there are many forces which push towards organization of the curriculum by subjects. The teachers in the system and the examinations taken are all subject centred. Further, this lends to the ease with which programmes can be developed. Yet there are some areas as, for example, when one begins to tackle the various problems of society or to study the idea of social change, which seem to point towards an inter-disciplinary approach.

Subject committees, in the model presented here, responsible to the Planning and Research Division, should work out the detailed programmes. Their composition should be of subject specialists, practising teachers and curriculum specialists, but in arriving at their programmes they should be conscious of all the considerations (as set out in Figure 3) which should go into the specifications. In the Barbadian situation, the need will be to involve teachers from all types of secondary schools and so assist in the problem of implementation afterwards. Three types of institutions for secondary education were set out in Chapter I. It is clear, however, that the all-age school is being phased out and, in any case, there are basically two types of programmes -

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1/ Robert S. Fox, "Innovation in curriculum: An overview", p. 133. Interchange, Toronto, Ontario Institute for Studies in Education, Vol. 3, Nos. 2-3, 1972, p. 131-143.

2/ John I. Goodlad, op. cit., p. 16.

3/ Organization for Economic Co-operation and Development. Development of secondary education. Trends and implications. OECD, Paris, 1969, p. 175-176.

one leading to the Ordinary Level examinations and the other to the School Leaving Certificate. Subject curriculum committees should be asked to formulate specifications for both these programmes and, at the same time, to consider the needs of pupils continuing in secondary school but unable to reach either level. One last point here is that it would be desirable to have one subject committee looking at the needs of all pupils in the system and so as to maintain an interrelation between the different programmes which might facilitate transfer of pupils from one to another.

There are two other factors of which one needs to be conscious when thinking of the development of specifications. First, with the establishment of the Caribbean Examinations Council, the entire area is being asked to address itself to the development of programmes and for recommendations to be fed into the School Examinations Committee and the Subject Panels - this topic will be discussed under the head of Evaluation. It is enough to say that all that is necessary in the structure set out here is for the members of the subject committees to be aware of their dual responsibility. Indeed, they have a basic document as a start to their activity. 1/

The other factor which has to be taken into account is the University of the West Indies - Unesco Curriculum Development and Teacher Training Project. The major work here is with teacher motivation and training to help teachers accept new methods of thinking in the development of programmes and acquire competence in teaching these programmes. There is also a great part of their activity in unit package development where pupil teaching units are prepared. The easiest way of ensuring that this work is not in conflict with the subject committee work is to involve directly some members from the consultant staff and the teachers themselves in the pilot programmes in the subject committee work.

One thus sees, in the development of specifications, the National Curriculum Development Council selecting values, deducing the educational aims of the system from them and recommending the general objectives at the secondary level and the structure which the curriculum organization should take. The subject committees would be responsible for the details of the specifications. The Planning and Research Division would provide models or frameworks within which both groups would function effectively, or which they might at least use as a starting point, assuming through their staff the responsibility for collating and co-ordinating the work.

1/ Ministry of Education, Barbados. Report of the Committee on the Evaluation of the Performance of Candidates in the Examinations of the Overseas Examination Boards 1966-1970. 1972 (processed)

Supports for successful implementation

One of the major positions taken is that curriculum development needs to be especially carefully planned at the implementation stage. Here we will be looking at what are, in effect, necessary supports for successful implementation - an adequately staffed Planning and Research Division, carefully organized pre-service and in-service teacher training and the production of curriculum materials.

Staffing of the Planning and Research Division

The Planning and Research Division has other areas of responsibility besides that of curriculum development, but consideration here will be restricted to this aspect only. This Division should be able to cover all the functions of systematic curriculum development which were set out in Chapter II and be responsible for all levels in the system, and these two key factors should be taken into account in the recruitment and training of staff.

So far, the Division has one officer to cover the general area of curriculum development and is pursuing the trend of hiring specialists in subject areas. If persons so recruited can monitor the developments in their subject areas as well as spearhead both the subject committee work and the implementation of programmes, most of the functions recommended would be covered. It is expected that the officer in the general curriculum area would be concerned with the research and implementation functions of systematic curriculum development. What is urgently needed, but has so far not been given much attention, is to have someone in the curriculum evaluation area who will be able to conduct evaluation both of the curriculum itself and of student learning.

It must be realized that in a country of the size of Barbados, it might not be worthwhile to have a large permanent staff in this Division but that it would be preferable to draw on the expertise of a number of persons who are already committed to part of the programme of systematic curriculum development - teacher trainers and practising teachers. The example of both New Zealand and Ghana, in using teachers and other qualified personnel on secondment for very specific tasks, is an extremely useful device. It would thus be possible in all but the major subject areas to cover all the functions specified by using persons on a part-time basis or on secondment, to be part of a writing team or to be co-ordinator and doing most of the research activity for one of the subject curriculum committees.

Pre-service and in-service training of teachers

Training for teachers in new methods and techniques of teaching and, in some cases, up-dating of content, is vital so that teachers may be motivated, and able to use effectively the new curricula which are being produced. It is accurate to say that if teachers do not acquire the correct attitudes and master the instructional techniques, a lot of curricula will hardly get off the ground.

We are fortunate that, in our situation, there are many things which favour such curriculum development. First, there is a concerted effort being made to train graduate teachers at the secondary level to the stage of a Diploma in Education. This will start in August 1973 as an in-service programme at the School of Education of the University of the West Indies, and is seen not only in terms of imparting scientific instructional procedures to the teachers, but as doing this within a programme of curriculum development. Many of the staff in this programme will be directly involved in the committee work of the curriculum development programme and one could, therefore, expect a consistency of purpose.

Second, the University of the West Indies-Unesco project has as one of its main concerns Teacher Training. It is working in comprehensive schools with teachers of the 11-14 age group, both graduates and non-graduates, but concentrates its activity at the Training College for both Primary and non-graduate teachers. There is thus involvement of teacher trainers at this our second teacher training institution - it is important to note that this is all - and it is reasonable to expect that this would be reflected in their normal training programmes.

Yet, there are some problems of which we should take note. Part of the motivation for teachers to attend training programmes comes from their expected ability to function better, but there is also a great part which comes from financial rewards attached to successful completion of the programme. For those teachers in the In-service Diploma of Education programme, or taking the Teacher Training Certificate, there is specific incremental credit attached to success in these courses. However, in a programme of systematic curriculum development, while recognizing the value of the regular training programmes, it is necessary to reach urgently, in the interest of the speed of the implementation, those teachers who have already undergone their training or who are not going to be doing so immediately.

The work of the subject teacher associations in organizing training programmes has been very useful, and the zest of these associations can be harnessed to facilitate the curriculum activity, but even when this is taken into account there is a sizeable number of persons who will not be touched by this activity.

It is worthwhile to note that the retraining programme is tied to the changes made in the programme and thus, while for some subjects there will be need for a massive retraining programme, in others this will hardly be the case. Further, it is possible that in the enthusiasm of a mass of curriculum activity, more persons will attend than might at first be expected. There are conflicting claims for the success of teachers' notes being given along with the instructional materials as being useful training devices; this can also be tried. The methods one would use or the structures which should be set up to get persons to come to in-service courses would have to be subjected to experiment and evaluation.

Production of instructional materials

The final support being examined which is needed for systematic curriculum development - the development or availability of suitable instructional materials - is, in some ways, one of the most difficult. The findings of the subject curriculum committees, both in terms of content and the way it should be organized in learning experiences to ensure that objectives are reached, should be reflected in a set of curriculum materials. There are a number of innovative curriculum materials which are designed to facilitate teaching methodology: multi-media, programmed texts etc., but here we will concern ourselves with textbooks and pamphlets.

Once the curriculum specifications have been designed by the committee, it is possible to develop curriculum materials at two levels: (a) by the committee members themselves or by specially chosen writing teams; (b) by commercial publishers using the specifications.

Before looking at this problem in more detail, it is necessary to note the proposed functioning of one related committee - the Textbook Selection Committee 1/ - a function which in this structure is subsumed under the Planning and Research Division and carried out by members of the various committees. Here books which fit in with the specifications or meet them to a large extent would be adopted into the recommended list of textbooks. It is to be expected that writing teams of the various committees would produce supplementary material in terms of units or topics when the textbooks are only slightly deficient in terms of specifications. Where there are no suitable textbooks, it is another matter.

The problems in a small country like Barbados are many in this context. With respect to the production of materials, there are few persons with expertise in textbook production and this lack of experience would make the work of a writing team very difficult - it would undoubtedly take a long time to acquire the skills and prepare the textbook. A second consideration which also affects the possibility of commercial publishers producing for Barbados is the size of the market. This is even smaller when one recognizes one of the implications of this style of curriculum development. Formerly, when a textbook was put on the market, it would be a long time before it was either looked at for revision or replaced; now, with the emphasis on rolling reform, one can expect that the active lifetime and use of textbooks will be considerably restricted - as a matter of fact in some subject areas there might be a preference for the use of materials which cover topics and which could be modified relatively easily rather than dependence on a particular text.

1/ This is a committee which will recommend books to be used in the subject areas (a) once a book is recommended it stays on the list for 3 years and can be given renewals; (b) there are about 3 books indicated for each subject and staffs can choose within this range.

The Textbook Selection Committee aims at achieving a type of standardization of materials within a range of about 3 different texts, but it does not have authority to make these recommendations outside those schools directly controlled by the Ministry of Education. It is hoped that the contact between the Curriculum Committee and the Textbook Committee will make the texts recommended - since they will be chosen to fit the specifications - be adopted in the Grammar Schools.

Problems are thus seen both in the production of curriculum materials and in their use in the secondary schools. On the first point, by tying the curriculum to the syllabus for the examination, there will be an increased potential market as all the territories would be working on the same syllabus. This itself underlines the urgency to begin secondary curriculum development now. There then remains the question of getting some publisher to produce materials according to the specifications.

Here it might be useful to note one of the results of curriculum development in Israel. The rejection, by teachers, of books which did not meet adequately with the specifications of the committees, has brought about a situation where the publishers, before beginning to write, check with the Curriculum Centre on the specifications in the subject in which they are interested. This is one of the results of dynamic systematic curriculum development which it is hoped could be achieved in the situation in Barbados.

Getting the programme into the school system

The objective of curriculum development is that relevant programmes for the schools should be efficiently designed and effectively implemented. The previous problems examined dealt with developing the programme and getting the support systems in readiness - here we look at the problem of getting into the school system.

As has been set out in Chapter I, the system of control in the schools varies according to the type of school. In the Grammar Schools the Headmaster is answerable to a Governing Body, but in the actual operation he has a reasonably free hand. In the Comprehensive and All-age schools, the Headmaster is answerable to the Education Officers of the Ministry of Education and he has considerably less autonomy than his Grammar School counterpart. There are certain traditional characteristics which are present in this situation and which are important for understanding its operation. The Ministry of Education has always closely supervised the schools under their charge and a lot of what takes place in Comprehensive and All-age schools reflects the direct influence of the Ministry. On the other hand, the Governing Bodies, although appointed by the Government, can adopt a fairly independent line of operation.

It has been thought useful to point out the chain of command to show one possible route of how orders can be passed in a school situation, yet one would not want to use a formal administrative route to produce curriculum change. There must be, in any change situation, a group of persons who are facilitators in development and organization of change and it is the responsibility of the Planning and Research Division to find these and note how easily they can be reached.

Studies are now becoming very frequent in the area of innovation and change in education and, though the pattern is not yet definitely fixed, it appears that "humans are both the most commonly cited obstacles to and facilitators of educational change. Working effectively with people appears to be the key to successful innovation and change, particularly when the 'unknown' is involved". 1/ This study, reported by Miller, shows that "the commonly held notion that materials, equipment and organizational patterns are the key factors in programme development is dispelled". 2/ The position is similarly supported in articles by Fox 3/ and Taylor 4/. Yet we must observe a caution here.

Most of the literature on change, in English at any rate, is American and in it there are several limitations pointed out by Huberman. 5/

(1) Its language is often highly technical and looks mainly to a logical move from theory to practice neglecting illogical types of resistance to change.

(2) It concentrates on behavioural aspects in 'rôles' and inter-personal relationships.

(3) It tends to neglect the importance of the social, historical and political framework in which all innovations operate.

While not giving too much emphasis to the stress of the human element in change, it must be recognized that it is important, but there are other significant factors in the Barbados situation to which attention must now be drawn.

First, involvement in the development stage. Committee membership should reflect the involvement of all secondary schools. It will at least be given an easy start because some of the subject areas have organized themselves into associations, so, by choosing some of the committee members from subject associations, there will be something of a guarantee that its work will be acceptable by the associations. Further, because practising teachers are involved on the committee, small units of work can be field tested in the classroom and the feedback can be immediately useful at the committee level. Second, the development of proper in-service

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1/ Peggy L. Miller, 'Innovation and Change in Education', p. 339. Educational Leadership, Washington, Journal of the Association for Supervision and Curriculum Development. N. E. A. January 1970, p. 339-340.

2/ Ibid p. 339.

3/ Robert S. Fox, op. cit.

4/ Bob L. Taylor, op. cit.

5/ A. M. Huberman, Understanding change in education: an introduction, (Experiments and innovations in education, No. 4), Unesco : IBE, Paris, 1973, p. 4.

programmes. Here it is only necessary to underline an area which was developed earlier. Finally, it is necessary to have a group of persons who can act as change agents and monitor change - this should be set as one of the duties of the Planning and Research Division.

Even though many of the critical areas in the change process have been identified, we are still left with the problem of finding a model which could be useful in introducing change. There are three basic types identified in the literature on the process of change. 1/

(i) the research and development model - change is presented in an ordered sequence: identification of a problem, search for solutions, solutions diffused to a target group. The assumption here is that there are links between the research world and the practice world;

(ii) the social interaction model - an innovation is introduced to a population and diffusion depends on the channel of communication within the receiver group. This model has worked best in decentralized systems;

(iii) the problem-solving model - change occurs because the receiver desires it and participates in bringing it about.

Each of these models illustrates one aspect of the innovative process and one would hardly want to accept one to the exclusion of the others. Actually, all the operations should be accounted for in the process but, granted the difference in control of the schools and the wide involvement which is being advocated, it might appear that a combination of social interaction and problem-solving models in a formulation such as that devised by Lippitt 2/ would be appropriate.

Curriculum evaluation

It would be accurate to state that, until very recently, a lot of school systems were not very well equipped to evaluate the overall outcomes of teaching and learning activities. There was very little clarity in the aims and general objectives and what was said of the American Schools is true of secondary schools in many countries and of many schools in Barbados: "the goals of today's school systems do not extend beyond those subjects that have succeeded in establishing themselves in the curriculum". 3/ This is certainly one of the situations from which we will be moving, in that the educational aims and general educational objectives will be stated in a manner which will be amenable to evaluation.

1/ A. M. Huberman, op. cit., p. 61-62.

2/ Ronald Lippitt, Jeanne Watson and Bruce Westley, The Dynamics of Planned Change, New York, Harcourt, Brace and Co. Inc., 1958. They set out five general phases to the change process: (1) the development of a need for change (unfreezing), (2) establishment of a change relationship, (3) working toward change (moving), (4) generalization and stabilization of change (freezing) and (5) achieving a terminal relationship.

3/ John I. Goodlad, The Changing School Curriculum, Washington, Fund for the Advancement of Education, 1968, p. 92.

Problems in achieving systematic curriculum development and possible solutions

With respect to evaluation of student performance, one can state that secondary education has long been dominated by the external examinations which the pupils took and, to put it crudely, the basic aim of secondary schools has been to enable students to pass the examinations conducted by the Examination Boards. These examinations caused teachers "to teach what the examinations are believed to be looking for and students to tend to learn just as much as the examinations require". 1/ With respect to this last point, it should be noted that this does not only occur in the year in which the examination is taken, but is present for much of the school career. This paragraph refers to the influence of the Ordinary Level examination, but the same can be said with little modification about the School Leaving Certificate.

There is a sort of evaluation of student performance all along the way, most noticeably in terms of end of year examinations, but these have little or no influence on the programme. In addition, for those students who are not proceeding to any of the two above-mentioned examinations, there can be said to be little systematic evaluation conducted.

Even if we accept what could be described as the weak forms of evaluation of student performance, there is even less evidence of evaluation of the programme - student difficulties are usually seen in terms of student weaknesses and the method of instruction and not the programme. The changes in the programme very often come not from systematic evaluation but from teacher opinion - of course, one is able to find systematic approaches by some of the subject associations.

The problem of evaluation in systematic curriculum development lies in how we conduct formative and summative evaluation of both the programme and the student performance and also, because of the powerful influence that they exert, how we get the examination syllabus to contain the specifications which are desired and adopt a variety of evaluation procedures.

To note the question of the programme first. In the method of construction there is built-in evaluation at every stage of the cyclic model proposed. The relevance of the objectives, which will be stated in terms of pupil behaviour will be continuously judged against the general objectives and so will the content and each stage following. Further, both in the testing of pilot units and later in a stage of controlled experiment, the programme will be tested to ensure that the opportunities being offered give the pupils a reasonable chance of arriving at meaningful goals. The systematic review of the programme after a specified number of years also checks on the continued relevance of the total programme.

In evaluating student performance, the fact that objectives will be very clearly stated in terms of pupil behaviour, means that there will be clear guidelines to use. Where class teachers are concerned, the presentation of the programmes in units will enable them to conduct formative evaluation more easily and so modify their future teaching behaviour both in terms of the content to be tackled and the style of presentation.

1/ Unesco, Growth and Change. Perspectives in Education in Asia (Educational Studies and Documents, No. 7), Paris, 1972, p. 46.

The major part of the proper guidelines for evaluation will come from the carefully defined objectives of the programmes but even after this teachers will have to become sensitized to the various levels at which student performance can be judged - as set out in the Taxonomy of Educational Objectives 1/ - and also the usefulness of formative and summative evaluation. It will be one of the responsibilities of the in-service training programme to cover these areas.

The evaluation which will be most thorough is the formative evaluation conducted by the Planning and Research Division. Here the cycle of test, revise, retest will be carried out first, at the level of units, and then at the level of the entire programme until the materials are thought to be satisfactory and flexible enough to meet the needs of all the pupils who will be using the programme. This testing will, of course, be in pilot programmes and using carefully constructed experimental designs.

It is necessary to establish definite criteria before the adoption of programmes across the system. Not to gainsay the necessity of proper supports for successful implementation, there should be proof that (i) the students can achieve the objectives in programmes through the learning situations structured, and (ii) that there is intrinsic value in the programmes.

It remains now to look at the place of the external examinations in curriculum evaluation. Two areas have been of great concern and reform in these areas would contribute greatly to the improvement in teaching and learning. First there should be close agreement between the examinations and curriculum objectives. Starting as we are now from the position of the creation of a Caribbean Examinations Council and recognizing that from all territories there have been complaints with respect to specifications, the enterprising activity of any one territory is needed for a redefinition at this stage before the old pattern is continued. Second, examinations are accepted as vital to the educational process, therefore there should be some attempt made to assess a wider range of educational outcomes than that now covered. Perhaps the main reason why reform of examinations has not been clearly seen in this area is because of a lack of refined instruments for testing and evaluation, and it is hoped that some of the institutions of higher learning in the area will address themselves to the problem.

The area of the evaluation of the curriculum is one of great difficulty, but it is vital if we are to conduct a systematic process of curriculum development and are not satisfied with assumptions that a programme is suitable merely because it seems to be doing a better job than the one it replaced. Here are noted two key points of focus in our evaluation of the curriculum, but not detailed are the instruments which could be used - sampling and research designs, statistical and data processing procedures - to determine how effective the curriculum really is.

1/ Benjamin S. Bloom et al., Taxonomy of Educational Objectives: Cognitive and Affective Domains, New York, David McKay Co. Inc., c. 1956.

It is expected that the drawing up of models for this type of evaluation and the actual testing of the programmes would be the responsibility of the evaluation specialist in the Planning and Research Division and of his team. It is, however, important to realize that starting from where we are now, we should get the class teacher equipped to use proper evaluative methods of the curriculum and also get what will be the major evaluation instrument at the secondary level - the Caribbean Examinations Council - to reflect in its ryllabus the specifications which have been the result of systematic curriculum development.

CONCLUSION

This paper has referred in its title specifically to curriculum development at the secondary level, but much of what it says has a general relevance to curriculum development at all levels. It is especially important to note this, as the model of curriculum development should be consistent at all levels and as it is expected that activity at all levels will be going on simultaneously.

However it is still interesting to reflect on what aspects of curriculum development are unique at the secondary level. There are two aspects seen here which are elaborations within the overall pattern and carry special implications rather than being intrinsically different.

First, one of the components to be taken into account when looking at the relationship between schools and society is the different needs and demands. 1/ The pattern of needs behind the development of programmes in the primary system is different from those in the secondary. The needs for a more specialized programme at the secondary level added to the need to adapt the materials at their level of maturity makes for one unique feature. This should be reflected in the organization of the subjects and the style of instruction.

Second, because of the rôle of external examinations, the programmes have to fit into a mould which allows for consideration of equivalence of standards.

Not only must the model of curriculum development be consistent at all levels, but the detailed specifications developed at the secondary level must be fitted into the framework of the total educational system. As such it is hardly necessary to stress that secondary courses should not only consolidate and build upon primary school courses but, where they are leading to tertiary institutions, should facilitate a smooth transfer.

One final point should be noted. In this paper comment has not been made on the details of the operation of curriculum development, whether it be the ways in which subject committees should work, details of how in-service programmes can be set up or a network showing the order and likely time sequences in a curriculum exercise. Rather, this paper has concentrated on the structure and conditions for conducting systematic curriculum development in Barbados.

1/ Urban Dahllöf, 'Materials and Methods of Implementing Curricula: A Swedish Model', Curriculum Theory Network, Toronto, Ontario Institute for Studies in Education, CTN 5 Spring, 1970, p. 32-48.

Possible strategies

The possible solutions to some of the problems detailed in Chapter III are put here in the form of suggestions:

Organization for systematic curriculum development

(i) The Planning and Research Division of the Ministry of Education should function as a curriculum centre and carry out all the functions necessary for that institution.

(ii) The national Curriculum Development Council should function as a group which designs the general specifications of the curriculum but should not have overall responsibility.

(iii) Members of the Planning and Research Division, whether permanent or on secondment, should hold the key posts - as, for example, secretary or co-ordinator - on all curriculum committees.

Implementation

(i) The Planning and Research Division should have permanent staff members in the key subject areas, Research and Evaluation. All other areas should be covered by persons on secondment.

(ii) Teacher training institutions should be given responsibility for all in-service programmes needed to facilitate the curriculum development activity.

(iii) Specifications arrived at by the subject committees should be made available to all interested commercial publishers.

Caribbean Examinations Council

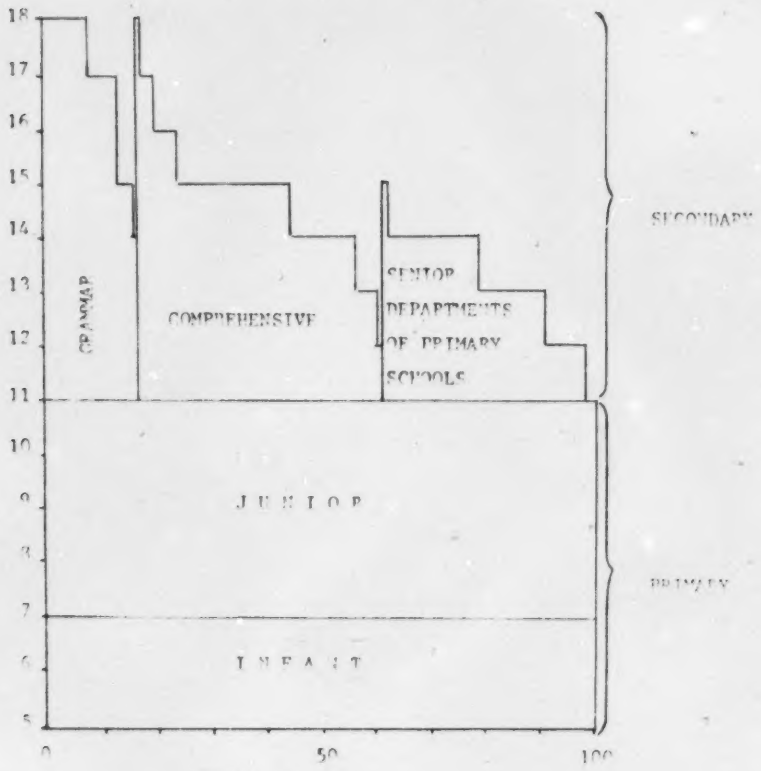
(i) The work of the curriculum subject committees should be fed into the Schools Examinations Committee and the Subject Panels of the Council as soon as it is ready, so that the examination examines what the children are meant to learn from the curriculum which has been carefully considered to be relevant to the Barbadian situation.

(ii) Universities and research institutes in the area should be asked to study the problem of alternative ways of assessment which would cover a wider range of educational outcomes than are now being studied.

Appendixes

Appendix I

Participation rate at primary and secondary levels



This chart was constructed from the figures of 30 June 1970.

Appendix II

School enrolment 1967/68

	Grand total boys and girls	Boys				Girls			Grand total as % of age group
		Total	Private	Approved	Government	Government	Approved	Private	Total	
6 (up)	196	123		5	118	61	12		73	1
6	354	130		20	110	110	114		224	6
5	2 347	1 026		390	636	690	631		1 321	38
4	3 432	1 482		330	1 152	1 143	799	8	1 950	54
3	5 379	2 655	3	602	2 050	1 604	1 077	43	2 724	83
2	5 031	2 972	1	457	2 514	2 085	845	20	2 950	86
1	6 818	3 372	4	423	2 945	2 553	861	32	3 446	99
Sub-total Secondary	24 457	11 760	8	2 227	9 525	8 246	4 339	112	12 697	55
4	5 712	2 787	80		2 707	2 787		144	2 925	93
3	5 762	2 886	96		2 790	2 758		118	2 876	95
2	6 126	3 083	96		2 987	2 937		106	3 043	97
1	7 048	3 645	120		3 525	3 277		126	3 043	115
B	5 968	2 958	128		2 830	2 902		108	3 010	97
A	10 205	5 232	157		5 075	4 840		133	4 973	159
Sub-total Primary	40 821	20 591	677		19 914	19 495		735	20 230	105
Total	65 278	32 351	685	2 227	29 439	27 741	4 339	847	32 927	78

Source: Ministry of Education

Appendix III

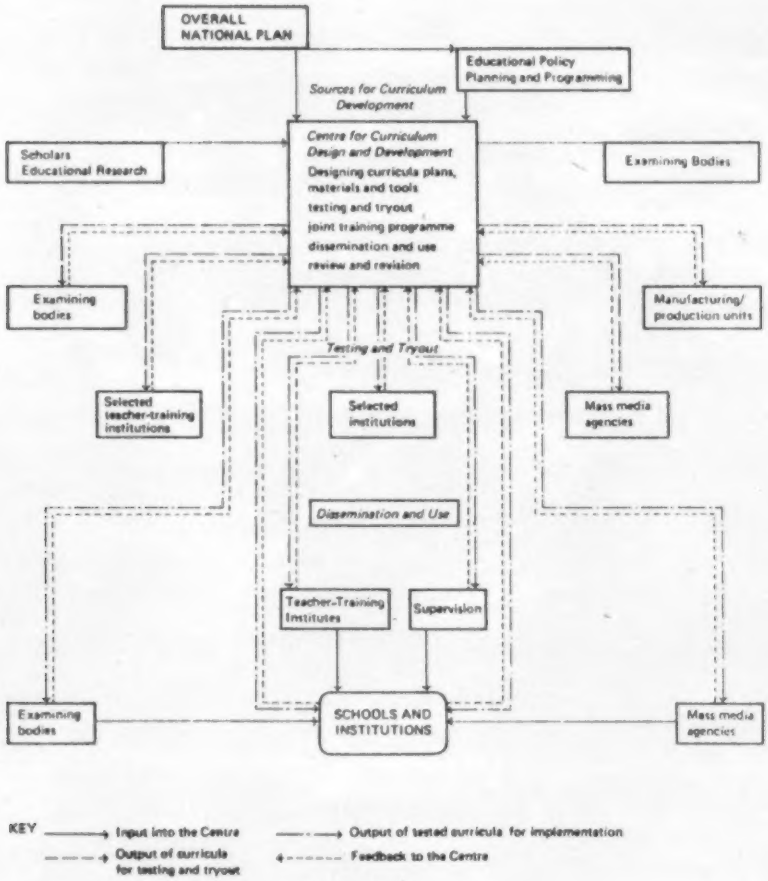
School enrolment 1967/68

	Grand Total boys and girls	Private	Approved	Government	Total	Boys	Girls	Total	Government	Approved	Private	Grand Total as % of age group
6	196		5	118	123			73	81	12		3
6	354		20	110	130			224	110	114		6
5	2 347		390	636	1026			1321	690	631		38
4	3432		330	1152	1482			1950	1143	799	8	54
3	5 379	3	802	2050	2855			2724	1804	1077	43	83
2	5 931	1	457	2514	2972			2959	2085	845	29	89
1	6818	4	423	2945	3372			3446	2583	881	32	99
Sub-total Secondary	24 457	8	2 227	9525	11780	Boys	Girls	12697	9248	4339	112	85
4	5712	80		2707	2787			2925	2787		144	83
3	5762	98		2790	2886			2878	2758		118	85
2	6126	96		2987	3083			3043	2937		106	92
1	7048	120		3525	3645			3043	3277		126	115
B	5968	128		2830	2958			3010	2902		108	97
A	10205	157		5075	5232			4973	4840		133	159
Sub-total Primary	40821	677		19914	20591			20230	19495		735	105
Total	65278	685	2227	29439	32357			32927	27741	4339	847	78

Source: Unesco, Barbados. Education and its priorities for its development. Paris, July 1969, p. 13

Appendix IV

Centre for Curriculum Design and Development - Input-Output Chart



Source: Unesco, Growth and Change. Perspectives of Education. (Educational Studies and Documents, No. 7), Paris, 1972, p. 47.

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OCCASIONAL PAPER No. 32 attempts to see how systematic curriculum development can be conducted at the secondary school level in Barbados. The paper begins with a broad overview of the secondary school system in Barbados and sets out the main factors which can influence or be used in curriculum development activity. It goes on to discuss the problems which there might be in each of those areas which are seen as inescapable to the proper functioning of systematic curriculum development - the development of specifications, the production of instructional materials, the evaluation of curriculum and the training of teachers. In addition, questions on the organization for curriculum development and the method of bringing about change are examined.

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